Project Data Sheet

EventScope Portal to Mars

Last updated: 14 February 2003 Revision: 03

Project Objectives

- Develop a software system for creating, performing, and distributing engaging, visually realistic Mars Science lessons composed of annotated NASA 2003 Mars Exploration Rover (MER) imagery and other data.
- Achieve interactive performance of these lessons on inexpensive desktop computers typically deployed in elementary schools.
- Develop and distribute pedagogically sound and scientifically accurate activities for this system.

Sample Use Cases

- A middle-school student learns about the surface of Mars through guided activities. Using that knowledge she designs her own inquiries about specific spots in the Martian terrain. Pre-designed activities enable her to follow the scientific process to answer her own questions (e.g., through worksheets and other tools) in a way that teaches and reinforces STEM standards conveyed in the activity. She can then compare her results with those that the Mars science team have come up with based on their own analysis of that image.
- A teacher or professional curriculum developer uses the system to create new activities, to expand on existing materials, or to point out special features for student study or testing.
- A curriculum distributor uses the system to collect, catalog, announce, and distribute material created by curriculum developers.

Customers

- K-12 students and educators

Deliverables for Phase 1

- The system's software components:
  - Authoring tool to create lessons
  - Viewing tool to perform lessons
  - Server software to collect (from NASA MER servers), catalog, prepare and manage raw material for curriculum development
  - Server software to distribute and manage developed curriculum (lessons)
  - End-user documentation for all above
- Four activities for the system, reviewed for pedagogical soundness, scientific accuracy and educational-standards relevancy

Milestones for Phase 1

	When	*What*	*Confidence*
ET.2-L.2-MAR.1	28 Feb '03	Prototype software implementation based on FIDO field tests	Green
ET.2-L.2-MAR.2	28 Feb '03	Software design and Requirements specs., Project Plan	Green
ET.2-L.2-MAR.3	1 Jun '03	Author, client and server software, TRL-5	Green
ET.2-L.2-MAR.4	1 Aug '03	Activities created and reviewed	Green
ET.2-L.2-MAR.5	1 Sep '03	Software testing report	Green
ET.2-L.2-MAR.6	15 Sep '03	Full simulation of "near real time" curriculum development and deployment	Green
ET.2-L.2-MAR.7	1 Oct '03	Final report	Green

People

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Partnerships

- Arizona State University
- JPL's Multi-Image Processing Laboratory
- Carnegie Mellon University: EventScope project
- Steve Squyres, Cornell, and Ray Arvidson, Washington U: science curricula review

Technologies

- MER imagery and science instrument data.
- Java-based 3D virtual environments with terrain models, annotations and lesson text
- Lesson authoring without programming
- Client/server network for automatic release of late-breaking mission data to classrooms

Quality Assurance

- Entire software system to be tested locally in lab and externally using NASA data servers.
- Lessons delivered to receive review and validation by partnering educators advisors.